SAT0315

STRUCTURAL DAMAGE PROGRESSION OVER 4 YEARS OF SECUKINUMAB TREATMENT IN ANKYLOSING SPONDYLITIS: POST-HOC ANALYSIS OF MEASURE-1 TRIAL USING A LONGITUDINAL BAYESIAN MIXTURE MODEL

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Background: Ankylosing spondylitis (AS) is an inflammatory disease resulting in progressive disability due to structural damage in the spine. The identification of predictors of progression would allow treating physicians to personalize treatments but requires an approach accounting for a relatively short follow-up of clinical studies, large between-patient variability, and low sensitivity of X-ray images which generate intra-patient variability when repeated measurements are taken.

Objectives: 1) To identify patient characteristics predicting faster structural damage progression. 2) To quantify the progression over four years of secukinumab treatment, depending on dose/exposure.

Methods: Data came from the phase 3 randomized placebo-controlled trial MEASURE 1 (NCT01358175)¹ in which patients were treated with secukinumab (intravenous loading of 10 mg/kg at weeks 0, 2, and 4, followed by secukinumab subcutaneously at a dose of either 75 mg or 150 mg every 4 weeks) over 208 weeks. Only patients treated with secukinumab with at least two assessments of structural damage were included. We explored the effect of multiple baseline demographic traits, disease stage, severity, bone cartilage biomarkers as well as prior and current treatment on change in modified Stoke Ankylosing Spondylitis Spine Score (mSASSS) using a longitudinal Bayesian mixture model with random effects, which accounted simultaneously for the probability of progression, magnitude of progression and inter-patient variability. Posterior predictive check was performed.

Results: Out of 249 patients randomized to secukinumab, 167 had their structural damage assessed at least twice. These patients contributed in total 409 assessments of change in structural damage between weeks 0, 52, 104 and 208.

Of the factors tested, a higher baseline BASMI score was associated with faster progression rate in a statistically significant way (+0.60 in mSASSS/year for each additional standard deviation of baseline BASMI (SD=1.74), 95% interval 0.03 to 1.14). Trends were also detected for association between faster mSASSS progression and younger age, prior exposure to TNF α inhibitor, HLA-B27 positivity, and higher osteocalcin levels. Increased exposure to secukinumab was associated with slower structural damage progression (-0.23 in mSASSS/year for each additional standard deviation in exposure, 95% interval -0.58 to 0.10). Model estimation suggested that secukinumab 150 mg was associated with a yearly progression of -0.2 (95% interval -1.2 to 0.8) in the first two years of treatment and 0.1 mSASSS (95% interval -0.8 to 1.0) in the third and fourth year of treatment. Analogously, secukinumab 75mg (currently not approved for clinical use) was associated with a progression of -0.2 mSASSS/year (95% interval -1.3 to 0.9) in the first two years of treatment and 0.5 mSASSS/year (95% interval -0.5 to 1.6) in the third and fourth year of treatment.

Conclusion: Potential predictors of structural progression suggested by the model were higher baseline BASMI, younger age, prior exposure to TNF α inhibitor, HLA-B27 positivity, and higher osteocalcin at baseline, although only baseline BASMI showed statistical significance. Further analyses using larger, deeper and real-world data are needed to confirm these findings and to estimate progression rates in AS patients in daily practice.

REFERENCE

[1] Baeten D, Sieper J, Braun J, et al. Secukinumab, an Interleukin-17A Inhibitor, in Ankylosing Spondylitis. *N Engl J Med*. 2015;373(26):2534-2548.

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SAT0316

EARLY RECOGNITION OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS BY USING A PRACTICAL REFERRAL SYSTEM – EVALUATION OF THE RECENTLY PROPOSED 2-STEP STRATEGY

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Background: Early recognition of axial spondyloarthritis (axSpA) in primary care (PC) is difficult due to the high prevalence of low back pain resulting in a major delay for a diagnosis of axSpA. Recently we proposed a 2-step referral strategy (1) which concentrates on patients ≤ 45 years with chronic back pain who are to be referred to a rheumatologist if fulfilling 2 of 3 features: buttock pain, improvement by movement, psoriasis (Step 1), or, in case of ≤ 1 feature, positive testing for HLA-B27 (Step 2).

Objectives: To prospectively evaluate this 2-step referral strategy in PC.

Methods: Consecutive patients ≤ 45 years who presented in PC to general practitioners or orthopedic surgeons working in PC with back pain lasting ≥ 2 months who had not been diagnosed before received questionnaires (Q1) relevant for the referral process. Thereafter, the PC physician asked the same questions in a separate questionnaire (Q2), including the decision on HLA-B27 testing. All patients were then referred to two experienced rheumatologists in a tertiary center who performed a complete workup including clinical, laboratory and imaging with radiographs and magnetic resonance imaging (MRI) examinations before their final diagnosis of axSpA or non-SpA (Q3).

Results: A total of 320 patients (mean age 35.9 ± 10.3 years) was recruited. The proposed referral strategy (prS) was fulfilled by 127 patients in Q1 (39.7%), 160 in Q2 (50%), 102 by both, Q1 and Q2 (31.9%), and 83 with either Q1 or Q2 (25.9%). Overall, 47 patients were diagnosed with axSpA by the rheumatologist at Q3 (14.7%), 66% of which were male, mean age 34.7 ± 10.1 years, 70.2% HLA-B27 positive, mean CRP 0.8 ± 1.4 mg/dl, mean ASDAS 3.2 ± 0.8 , mean BASDAI 5.1 ± 2.0 . Of these, 37 patients had fulfilled the prS in Q1 or Q2 (78.7%), and 31 in both Q1 and Q2 (66%), respectively. In the latter, the HLA-B27 prevalence was significantly higher (27/31, 87.1%) as compared to patients diagnosed with axSpA at Q3 but who did not fulfill the prS in Q1 and Q2 (5/16, 31.3%) ($p < 0.001$).

The sensitivity and specificity of the prS was 78.7% and 69.2% in Q1, 78.7% and 62.2% in Q2, and in both, Q1 and Q2, 66% and 74%, respectively.

AxSpA patients correctly identified by the prS in Q1 and Q2, were significantly more frequently positive for HLA-B27 and CRP and fulfilled more frequently the ASAS definition of inflammatory back pain in Q3.

Conclusion: This study confirms the feasibility a simple referral strategy using a combination of clinical features for identifying axSpA patients in PC without laboratory and imaging examinations. This strategy performed already well at the early patient and PC physician level just based on a symptom-based questionnaire.

REFERENCE

[1] Braun A et al, *ARD* 2011

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SAT0317

INCIDENCE OF EXTRA-ARTICULAR MANIFESTATIONS IN ANKYLOSING SPONDYLITIS, PSORIATIC ARTHRITIS AND UNDIFFERENTIATED SPONDYLOARTHRITIS – RESULTS FROM A NATIONAL REGISTER-BASED COHORT STUDY

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Background: Spondyloarthritis (SpA), including ankylosing spondylitis (AS), psoriatic arthritis (PsA) and undifferentiated SpA (uSpA), are all to varying degrees associated with extra-articular manifestations (EAMs).

Objectives: To estimate incidence rates (IRs) for EAMs (anterior uveitis, inflammatory bowel disease (IBD) and psoriasis) in patients with AS, PsA and uSpA, respectively.

Methods: In this nationwide cohort study, three separate cohorts of patients aged 18 to 69 years with AS (n=8517, 68% men, mean age 47 ±13 years), PsA (n=22667, 46% men, mean age 49±12 years) and uSpA (n=10245, 44% men, mean age 42±13 years) were identified 2001-2015 in the Swedish National Patient Register (NPR). The follow-up began 1 January 2006, or six month after the date of the first SpA

Table 1.

	AS		PsA		uSpA	
	Prior EAM n (%)	IRs (95% CI)	Prior EAM n (%)	IRs (95% CI)	Prior EAM n (%)	IRs (95% CI)
ANTERIOR UVEITIS						
All	1852 (22)	14.4 (13.2-15.5)	356 (1.6)	1.7 (1.5-1.9)	1498 (15)	7.7 (6.9-8.5)
Men	1315 (23)	15.8 (14.3-17.3)	177 (1.7)	1.7 (1.4-2.0)	771 (17)	10.1 (8.8-11.5)
Women	537 (20)	11.2 (9.4-13.1)	179 (1.5)	1.8 (1.5-2.1)	727 (13)	6.0 (5.1-6.9)
IBD						
All	615 (7.2)	2.8 (2.4-3.3)	504 (2.2)	1.1 (0.9-1.3)	632 (6.2)	2.5 (2.1-2.9)
Men	403 (7.0)	2.6 (2.0-3.1)	192 (1.8)	1.0 (0.8-1.2)	268 (5.9)	2.6 (2.0-3.2)
Women	212 (7.7)	3.4 (2.5-4.3)	312 (2.6)	1.2 (1.0-1.4)	364 (6.4)	2.4 (1.8-2.9)
PSORIASIS						
All	264 (3.1)	5.6 (5.0-6.3)	NA	NA	405 (4.0)	7.7 (7.0-8.4)
Men	171 (3.0)	5.4 (4.7-6.2)	NA	NA	199 (4.4)	6.9 (5.9-8.0)
Women	93 (3.4)	6.1 (4.9-7.3)	NA	NA	206 (3.6)	8.3 (7.3-9.3)

The IRs are presented as number of EAMs per 1000 person-years at risk. NA, not applicable.

diagnosis thereafter in previously undiagnosed cases, and ended at the first date of EAM, death, emigration or 31 December 2016, respectively. Both the SpA diagnoses and EAMs were identified according to specified ICD codes. Number of outcomes, person-years at risk and IRs with 95% CI were calculated for each EAM and stratified by sex and age-intervals. Patients with a prior EAM in NPR before start of follow-up were excluded from that specific analysis.

Results: The IRs for each EAM are presented in Table 1. The overall highest IRs were noted for anterior uveitis in patients with AS (14.4 (13.2-15.5) per 1000 person-years at risk). Patients with PsA had considerably lower IRs for anterior uveitis (1.7 (1.5-1.9) per 1000 person-years at risk) and slightly lower IRs for IBD than patients with AS and uSpA. The IRs for anterior uveitis were significantly higher in men than in women in both AS and uSpA.

Conclusion: IRs for EAMs clearly differed between the SpA subtypes, and especially for anterior uveitis where the IRs were by far highest in patients with AS and uSpA compared to patients with PsA.

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SAT0318

PREVALENCE AND PREDICTORS OF DEPRESSION AMONG PATIENTS WITH ANKYLOSING SPONDYLITIS AND PSORIATIC ARTHRITIS IN A CANADIAN REAL WORLD OBSERVATIONAL COHORT: RESULTS FROM THE COMPLETE STUDIES

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Background: Ankylosing spondylitis (AS) and psoriatic arthritis (PsA) are chronic inflammatory diseases known to cause physical, emotional, social and psychological impairment. However, few data are available on comorbidities such as depression and the factors associated with depression.

Objectives: To evaluate the prevalence of depression and to identify sociodemographic and disease-related factors associated with depression among PsA and AS patients.

Methods: Patients eligible for the COMPLETE studies are anti-TNFα naïve adults with active AS or PsA requiring change in their treatment regimen. In this analysis, patients enrolled between Jul/2011 - Nov/2017, treated with adalimumab or non-biologic DMARDs were included. Depression was defined as Beck's Depression Inventory (BDI) ≥20 and/or patients treated with an antidepressant/anxiolytic at baseline (before treatment modification). Associated symptoms of depression were assessed with the BDI considering% of patients with a score of 2 or 3 (moderate to severe symptoms). Univariate and multivariate logistic regression were used to identify sociodemographic and disease-related predictors associated with depression at baseline. In addition, the correlation of the BDI score and the following parameters at baseline was assessed with the Pearson coefficient (r): age, disease duration, PsA disease specific parameters (28-tender [TJC] and swollen joint count [SJC], patient global assessment [PTGA], physician global assessment [MDGA]), and AS disease specific parameters (BASDAI, BASFI, morning stiffness, and number of extra-articular manifestations [EAMs]).

Results: A total of 492 AS and 333 PsA patients were included. Mean (SD) age was 42.7 (13.2) and 51.5 (12.2) years for AS and PsA, respectively, and disease duration was 5.4 (9.1) and 14.7 (13.7) years. The prevalence of baseline depression was 24.6% for AS and 25.5% for PsA. The most commonly reported symptoms of associated with depression, were loss of energy (33.2% and 26.2%), changes in sleeping